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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF APPEALS AND INTERFERENCES

DN A01463

In re application of: Brian Michael Bridgewater, et al..

Serial No. 10/700,078

Group Art Unit: 1714

Filed: November 3, 2003

Examiner: V. Nerangis

For: AQUEOUS ACRYLIC EMULSION POLYMER COMPOSITION

Honorable Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

## RESPONSE TO NON-COMPLIANT APPEAL BRIEF

This is a Response to the Notification of Non-Compliant Appeal Brief of December 9, 2009, containing amended Section V. Section VIII is also included, although not amended. Appellants had filed an Appeal Brief on September 30, 2009 for the above-referenced patent application.

## CERTIFICATE OF FIRST CLASS MAILING

Dear Sir:

I hereby certify that this Response to Notification of Non-Compliant Appeal Brief is being transmitted by facsimile to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 at 571-273-8300 on the date indicated next to my signature below.

Date: January 8, 2010 Signature: Andrew G. Bunn.

Total Pages: 10  
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DR. ANDREW G. BUNN.

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## SUMMARY OF CLAIMED SUBJECT MATTER [37 C.F.R. 41.37(c)(1)(v)]

Appellants claim (claim 2, original, support in the specification on page 3, lines 10-26): "An aqueous coating composition comprising a pigment and an aqueous acrylic emulsion polymer comprising, as copolymerized units, from 50 to 99.75% by weight, based on dry polymer weight, monoethylenically unsaturated nonionic (meth)acrylic monomer and from 0.25 to 10% by weight, based on dry polymer weight, monoethylenically unsaturated acid monomer, said polymer having a Tg of -10 °C to 35 °C wherein said emulsion polymer is formed by emulsion polymerization at a temperature of from 70 °C to 99 °C in the presence of a thermal initiator, wherein said initiator is used in the amount of 0.05 to 0.3%, by weight, based on dry polymer weight, and wherein less than half of said initiator is present during the first 10%, by weight, based on dry polymer weight, of the conversion of monomers to said emulsion polymer, and a neutralizer, wherein said neutralizer is used in the amount of from 5% to 75%, on an equivalents basis, based on said monoethylenically unsaturated acid monomer, and wherein less than half of said neutralizer is present during the first 25%, by weight, based on dry polymer weight, of the conversion of monomers to said emulsion polymer."

Appellants also claim (claim 1, original, support in the specification on page 2, line 24, to page 3, line 9) similarly, except: "...wherein the emulsion polymer is formed by emulsion polymerization at a temperature of from 70 °C to 99 °C in the presence of a thermal initiator, wherein said initiator is used in the amount of 0.3% to 0.4%, by weight, based on dry polymer weight, and wherein less than 0.15% by weight, based on dry polymer weight, of said initiator is present during the first 10%, by weight, based on dry polymer weight, of the conversion of monomers to said emulsion polymer; 0.001 to 0.05 moles of chain transfer agent/kg monomer; and a neutralizer, wherein said neutralizer is used in the amount of from 5% to 75%, on an equivalents basis, based on said monoethylenically unsaturated acid monomer, and wherein less than half of said

neutralizer is present during the first 25%, by weight, based on dry polymer weight, of the conversion of monomers to said emulsion polymer."

That is, among other differences, claim 1 additionally uses 0.001 to 0.05 moles of chain transfer agent/kg of monomer.

Appellants' claim 16 is identical to claim 1 except with respect to the amount of initiator used in the first 10%, by weight, of conversion. Claim 1 states "...wherein less than 0.15% by weight, based on dry polymer weight, of said initiator is present during the first 10%, by weight, based on dry polymer weight, of the conversion of monomers to said emulsion polymer;..." Claim 16 states: "...wherein from 0.078% to less than 0.15% by weight, based on dry polymer weight, of said initiator is present during the first 10%, by weight, based on dry polymer weight, of the conversion of monomers to said emulsion polymer;..." where the underlined wording is the only difference in the claim. Claim 16 finds support in the same original wording that supports claim 1 (claim 1, original, support in the specification on page 2, line 24, to page 3, line 9), and additionally in the wording of Example 1 on page 17 of the specification (the amount of 0.78 g of APS initiator, page 17, line 12, of the specification, is equivalent to 0.078%).

Similarly, Appellants' claim 17 is identical to claim 2 except with respect to the amount of initiator used in the first 10%, by weight, of conversion. Claim 2 states "...wherein less than half of said initiator is present during the first 10%, by weight, based on dry polymer weight, of the conversion of monomers to said emulsion polymer,..." Claim 17 states: "...wherein from 0.03% to less than half of said initiator is present during the first 10%, by weight, based on dry polymer weight, of the conversion of monomers to said emulsion polymer,..." where the underlined wording is the only difference in the claim. Claim 17 finds support in the same original wording that supports claim 2 (claim 2, original, support in the specification on page 3, lines 10-26), and additionally in the wording of Example 2 on page 18 of the specification (the amount of 0.3 g of APS initiator, page 18, line 26, of the specification, is equivalent to 0.03%).

## CLAIMS APPENDIX [37 C.F.R. 41.37(c)(1)(viii)]

## CLAIMS 1-18

1. (Original) An aqueous coating composition comprising a pigment and an aqueous acrylic emulsion polymer comprising, as copolymerized units, from 50 to 99.75% by weight, based on dry polymer weight, monoethylenically unsaturated nonionic (meth)acrylic monomer and from 0.25 to 10% by weight, based on dry polymer weight, monoethylenically unsaturated acid monomer, said polymer having a glass transition temperature (Tg) of -10 °C to 35 °C wherein said emulsion polymer is formed by emulsion polymerization at a temperature of from 70 °C to 99 °C in the presence of a thermal initiator, wherein said initiator is used in the amount of 0.3% to 0.4%, by weight, based on dry polymer weight, and wherein less than 0.15% by weight, based on dry polymer weight, of said initiator is present during the first 10%, by weight, based on dry polymer weight, of the conversion of monomers to said emulsion polymer; 0.001 to 0.05 moles of chain transfer agent/kg monomer; and a neutralizer, wherein said neutralizer is used in the amount of from 5% to 75%, on an equivalents basis, based on said monoethylenically unsaturated acid monomer, and wherein less than half of said neutralizer is present during the first 25%, by weight, based on dry polymer weight, of the conversion of monomers to said emulsion polymer.
2. (Original) An aqueous coating composition comprising a pigment and an aqueous acrylic emulsion polymer comprising, as copolymerized units, from 50 to 99.75% by weight, based on dry polymer weight, monoethylenically unsaturated nonionic (meth)acrylic monomer and from 0.25 to 10% by weight, based on dry polymer weight, monoethylenically unsaturated acid monomer, said polymer having a Tg of -10 °C to 35 °C

wherein said emulsion polymer is formed by emulsion polymerization at a temperature of from 70 °C to 99 °C in the presence of a thermal initiator, wherein said initiator is used in the amount of 0.05 to 0.3%, by weight, based on dry polymer weight, and wherein less than half of said initiator is present during the first 10%, by weight, based on dry polymer weight, of the conversion of monomers to said emulsion polymer, and a neutralizer, wherein said neutralizer is used in the amount of from 5% to 75%, on an equivalents basis, based on said monoethylenically unsaturated acid monomer, and wherein less than half of said neutralizer is present during the first 25%, by weight, based on dry polymer weight, of the conversion of monomers to said emulsion polymer.

3. (Original) The aqueous coating composition of claim 1 or claim 2 wherein said aqueous acrylic emulsion polymer comprises, as copolymerized units based on dry polymer weight, from 50% to 99.65% by weight monoethylenically unsaturated nonionic (meth)acrylic monomer, from 0.1% to 12.5% by weight aldehyde reactive group-containing monomer, and from 0.25% to 10% by weight monoethylenically unsaturated acid monomer.
4. (Original) The aqueous coating composition of claim 1 or claim 2 further comprising from 2% to 40% by weight, based on the total dry polymer weight, of a second emulsion polymer that has a Tg of from 25 °C to 150 °C, wherein the Tg of said second polymer is at least 10 °C higher than the Tg of said aqueous acrylic emulsion polymer.
5. (Original) The aqueous coating composition of claim 1 or claim 2 having a PVC of 15 to 38 and having VOC less than 5% by weight based on the total weight of the coating composition.

6. (Original) The aqueous coating composition of claim 1 or claim 2 having a PVC greater than 38 and having VOC less than 3% by weight based on the total weight of the coating composition.
7. (Original) The aqueous coating composition of claim 1 or claim 2 having a PVC of 15 to 85 and having VOC less than 1.7% by weight based on the total weight of the coating composition.
8. (Canceled)
9. (Canceled)
10. (withdrawn) A process for forming an aqueous acrylic emulsion polymer, said polymer having a glass transition temperature (T<sub>g</sub>) of -10 °C to 35 °C, wherein said emulsion polymer is formed by emulsion polymerization of monomers comprising from 50 to 99.75% by weight, based on dry polymer weight, monoethylenically unsaturated nonionic (meth)acrylic monomer and from 0.25 to 10% by weight, based on dry polymer weight, monoethylenically unsaturated acid monomer, at a temperature of from 70 °C to 99 °C in the presence of a thermal initiator, wherein said initiator is used in the amount of 0.3% to 0.4%, by weight, based on dry polymer weight, and wherein less than 0.15% by weight, based on dry polymer weight, of said initiator is present during the first 10%, by weight, based on dry polymer weight, of the conversion of monomers to said emulsion polymer; 0.001 to 0.05 moles of chain transfer agent/kg monomer; and a neutralizer, wherein said neutralizer is used in the amount of from 5% to 75%, on an equivalents basis, based on said monoethylenically unsaturated acid monomer, and wherein less than half of said neutralizer is present during the first 25%, by weight, based on dry polymer weight, of the conversion of monomers to said emulsion polymer.

11. (withdrawn) A process for forming an aqueous acrylic emulsion polymer, said polymer having a glass transition temperature ( $T_g$ ) of  $-10^{\circ}\text{C}$  to  $35^{\circ}\text{C}$ , wherein said emulsion polymer is formed by emulsion polymerization of monomers comprising from 50 to 99.75% by weight, based on dry polymer weight, monoethylenically unsaturated nonionic (meth)acrylic monomer and from 0.25 to 10% by weight, based on dry polymer weight, monoethylenically unsaturated acid monomer, at a temperature of from  $70^{\circ}\text{C}$  to  $99^{\circ}\text{C}$  in the presence of a thermal initiator, wherein said initiator is used in the amount of 0.05 to 0.3%, by weight, based on dry polymer weight, and wherein less than half of said initiator is present during the first 10%, by weight, based on dry polymer weight, of the conversion of monomers to said emulsion polymer, and a neutralizer, wherein said neutralizer is used in the amount of from 5% to 75%, on an equivalents basis, based on said monoethylenically unsaturated acid monomer, and wherein less than half of said neutralizer is present during the first 25%, by weight, based on dry polymer weight, of the conversion of monomers to said emulsion polymer.
12. (withdrawn) A process according to claim 9 wherein the polymer is formed in the presence of 0.001 to 0.05 moles of chain transfer agent/kg monomer.
13. (withdrawn) A process according to claim 9 wherein the polymer is formed in the presence of 0.0025 to 0.05 moles of chain transfer agent/kg monomer.
14. (withdrawn) A process according to claim 10 or 11 wherein the monomers comprise of from 50% to 99.65% by weight monoethylenically unsaturated nonionic (meth)acrylic monomer, from 0.1% to 12.5% by weight aldehyde

reactive group-containing monomer, and from 0.25% to 10% by weight monoethylenically unsaturated acid monomer.

15. (previously presented) An aqueous coating composition as claimed in claim 1, wherein the copolymerized units of monoethylenically unsaturated acid monomer comprise copolymerized sulfoethyl methacrylate or phosphoethyl methacrylate.
16. (previously presented) An aqueous coating composition comprising a pigment and an aqueous acrylic emulsion polymer comprising, as copolymerized units, from 50 to 99.75% by weight, based on dry polymer weight, monoethylenically unsaturated nonionic (meth)acrylic monomer and from 0.25 to 10% by weight, based on dry polymer weight, monoethylenically unsaturated acid monomer, said polymer having a glass transition temperature (T<sub>g</sub>) of -10 °C to 35 °C wherein said emulsion polymer is formed by emulsion polymerization at a temperature of from 70 °C to 99 °C in the presence of a thermal initiator, wherein said initiator is used in the amount of 0.3% to 0.4%, by weight, based on dry polymer weight, and wherein from 0.078% to less than 0.15% by weight, based on dry polymer weight, of said initiator is present during the first 10%, by weight, based on dry polymer weight, of the conversion of monomers to said emulsion polymer; 0.001 to 0.05 moles of chain transfer agent/kg monomer; and a neutralizer, wherein said neutralizer is used in the amount of from 5% to 75%, on an equivalents basis, based on said monoethylenically unsaturated acid monomer, and wherein less than half of said neutralizer is present during the first 25%, by weight, based on dry polymer weight, of the conversion of monomers to said emulsion polymer.
17. (previously presented) An aqueous coating composition comprising a pigment and an aqueous acrylic emulsion polymer comprising, as



copolymerized units, from 50 to 99.75% by weight, based on dry polymer weight, monoethylenically unsaturated nonionic (meth)acrylic monomer and from 0.25 to 10% by weight, based on dry polymer weight, monoethylenically unsaturated acid monomer, said polymer having a Tg of  $-10^{\circ}\text{C}$  to  $35^{\circ}\text{C}$  wherein said emulsion polymer is formed by emulsion polymerization at a temperature of from  $70^{\circ}\text{C}$  to  $99^{\circ}\text{C}$  in the presence of a thermal initiator, wherein said initiator is used in the amount of 0.05 to 0.3%, by weight, based on dry polymer weight, and wherein from 0.03% to less than half of said initiator is present during the first 10%, by weight, based on dry polymer weight, of the conversion of monomers to said emulsion polymer, and a neutralizer, wherein said neutralizer is used in the amount of from 5% to 75%, on an equivalents basis, based on said monoethylenically unsaturated acid monomer, and wherein less than half of said neutralizer is present during the first 25%, by weight, based on dry polymer weight, of the conversion of monomers to said emulsion polymer.

18. (previously presented) An aqueous coating composition as claimed in claim 2, wherein the copolymerized units of monoethylenically unsaturated acid monomer comprise copolymerized sulfoethyl methacrylate or phosphoethyl methacrylate.

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CONCLUSION

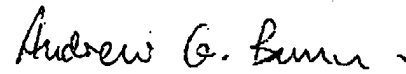
The Notification of Non-Compliant Appeal Brief, dated December 9, 2009 indicated that appropriate descriptions mapping the claim support was lacking for independent claims 16 and 17 in Section V of the Appeal Brief. An amended Section V is included in this Response. For the sake of convenience, Section VIII (the Claims Appendix) is also included here.

This Response is believed to be timely submitted, within 1 month of the Notification, and therefore it is believed that no fees are due. However, if any fees are deemed required for consideration of this Response, the Commissioner is authorized to charge such fee to Deposit Account No. 18-1850.

Respectfully submitted,

January 8, 2010

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